DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
~~FEDERAL SECURITY AGENCY~~
PUBLIC HEALTH SERVICE

IN REPLYING, ADDRESS THE

Communicable Disease Center
Enteric Bacteriology Laboratories
P. O. Box 185
Chamblee, Georgia

March 22, 1955

Dr. Joshua Lederberg
Department of Genetics
University of Wisconsin
Madison 6, Wisconsin

Dear Dr. Lederberg:

The group B serum sent you has a very good 5 component but the total agglutinin content is 1,4,5,12. I forgot to mention the 1 agglutinin and this is probably what confused you. You should have some of this serum left and I would advise absorbing it with S. bredeney (8 plates) + S. derby (4 plates) + S. typhi murium var. copenhagen (8 plates) per ml of serum. First centrifuge the absorbing organisms to a firm residue, drain off the supernatant, and suspend the growth from the 20 plates in 0.5 ml of saline. Divide into 2 parts, add 1 ml of serum to one portion, incubate at 45-48 C for 1 hour. Centrifuge and add the second portion to the same tube, mixing it with the supernatant. Again incubate at 45-48 C for 1 hour, centrifuge, pour off supernatant and preserve. I shall send a small amount of 5 serum for your guidance but these absorbed sera do not stand shipment too well. I will send the cultures for absorption.

I did not try to confer motility to the S. typhi. It was run through the diagnostic mill here, which accounts for the detection of H antigen. We probably never would have known it was nonmotile except that it was sent as a S. gallinarum suspect. It might be possible to locate the O antigens of the Serratia strain with E. coli serums. If you will send the two cultures perhaps Bill can find time to run them through. I am not sure we saved the first culture. The history of this child is very interesting.

I will see what O 35 cultures are available. Probably there are quite a few. Also I will give your letter to Bill for comment on the histories of the E. coli cultures. Likewise, I will send S. virginia but must warn you that the d antigen is not exactly the same as that of S. typhi (small specific residues on both sides).

You refer to our older correspondence. I am not too happy about my part in the work covered. I realize that I left some very interesting cultures up in air, particularly those a-b, a-c forms. However, my attention was called to other work and I could not make those monsters behave. They had a very poorly developed mechanism of phase variation, as I believe you also noted - they would go so far but no farther. On the contrary, the

Dr. J. Lederberg
3-22-55

S. abortus equi hybrid behaved as a typical 4,5,12: a-e,n,x strain with unchanged biochemical features. It is the only culture of that species I have seen which contained O 5 antigen and a perfectly well developed mechanism for phase variation. It deserves further work and mention in some future publication.

With best wishes, I am

For the Officer-in-Charge, Bacteriology Section

Sincerely yours,

Phil

Philip R. Edwards, Ph. D.
Bacteriologist-in-Charge
Enteric Bacteriology Unit

P.S.

We could never confirm the observation that H phase 2 was agglutinated by trypaflavine while H phase 1 was not. To me, this doesn't sound reasonable and I do not believe it. Any comment?

Bill has looked at the Serratia culture with E coli sera & found it related to O group 19. He will look at the suspect strain if you send it to him